# Information Sheet

## Revington TR Roll Over Protection (ROP) Single Hoop and Cage Product Range

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#### INTRODUCTION

In the 1970s when Roll Over Bars (ROBs or Roll Over Protection [ROP's] as they are commonly called now) became the thing to have in competition, John Aley in the UK started manufacturing ROB's for the sports cars of the day, which of course included TR's TR2-6. Later John Aley sold his company to Safety Devices, who continued to manufacture these bars into the new millennium. More recently Revington TR re-tool this range, rationalising and improving the designs, introducing a full range for TR7 and 8. Our ROP's are now made by Caged Laser Engineering in England exclusively for RevingtonTR, off our own tooling.

We aim to carry stocks of the common part numbers in the range of ROP's for TR2-8 in the variations described below for both road and competition use; less common part numbers are manufactured to order. To make it easier for you to decide which bar or cage is suitable for you, RevingtonTR have compiled this information sheet, which explains what features are available for your car and what the benefits of those features are.

#### **BAR TYPES**

#### **ROAD BARS**

RevingtonTR's road bars are designed for the casual road user who wishes to increase the safety of their TR but does not necessarily wish to use their vehicle for competition. To make the bar less of an obstruction, more convenient and to reduce the cost of the bar, road bars have a main hoop, do not have a diagonal brace but do have 2 angled back stays. The bars are still made from the same high-quality steel as the competition bars and therefore give you that extra piece of mind in case of that unfortunate occurrence of an accident.

#### **COMPETITION BARS**

RevingtonTR's competition bars are designed for those who desire the extra rigidity of a diagonal brace for competition or track day use. Customers who also use their car for general road use may be interested in our removable diagonal range. For general road use the diagonal bar can be left out and when taking the car to the track the extra safety of the diagonal brace can be re-fitted with just 2 bolts.

#### **FULL CAGES**

RevingtonTR offers a complete full cage safety solution for all TRs, for those who are building a competition TR. These cages comply with FIA rules and as the material used and the design conform with the FIA (and Motorsport UK in the UK) no certification is required. These cages comprise front and rear hoops, removable door and roof bars, harness bar and diagonal, and in some cases the option of a removable diagonal. Please see the technical information below to be certain the ROP you choose complies with the rules for your intended motorsport.

#### **OPTIONS**

#### **HARNESS BAR**

All ROPs, can be supplied with an integral or bolt on additional harness bar, which will not interfere with the operation of the hood on soft top cars. Many owners, whether using their car on the road or the track, will find the use of a harness both comfortable and reassuring. If you have chosen to fit a ROP it is generally considered that in the unfortunate event of the car rolling over it is preferable to be firmly strapped in. A full harness will achieve this with much greater effect then a lap and diagonal arrangement.

Roll over bars with a harness bar are suffixed HB. Where an additional bolt on bar is available (there is one for TR2-3B and another for TR4-6) this is shown separately. Where the bar is noted as having no ferrules, this type of bar is intended for use with harness shoulder straps that simply wrap around the bar. Where the bar is noted as having ferrules fitted this type of bar accommodates harness shoulder straps with snap hooks.

#### **DIAGONAL AND REMOVABLE DIAGONAL**

Our competition range has diagonal cross bracing for extra rigidity. These bars are handed so that the strongest point is above the driver's head, i.e. RHD ROP's have a diagonal running from top right to bottom left. There is also the option of the diagonal being removable, giving you the best of both worlds: the convenience of a non-obstructed rear view and better use of the rear shelf, for general road use and the safety of a diagonally braced ROP for competition.

Competition bars are suffixed with an L for LHD and R for RHD which dictates which way the diagonal brace runs. RTR9148 series ROB's with a removable diagonal are now supplied with fixing points in the main hoop so that the removable diagonal can be fitted in both LHD and RHD configuration.

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**IS0040** 

#### **TECHNICAL INFORMATION**

All our ROP'S (ROB's, Cages and universal Harness Bars) are made from ROPT510 Cold Drawn Seamless (CDS) carbon steel FIA spec tube, this material does not require annealing after welding. ROPT510 material has been developed specifically for motorsport use. The material specification can be viewed here <a href="https://proformancemetals.co.uk/products/ropt510/">https://proformancemetals.co.uk/products/ropt510/</a>. The tube dimensions are 1 ½" O/D diameter x 12 gauge (38.1mm x 2.64mm wall thickness). As the tube specification and design meets the minimum requirements of the FIA to their published drawings, there is no need for FIA approval of either ROB's or Cages. However, it is still up to the customer to ensure the ROP design is appropriate to the sporting regulations of their chosen competition.

**Note:** Chrome molybdenum 41-30 tubing is very hard and brittle and when welded creates hard spots which can result in cracking, this material needs annealing after welding, therefore making it unnecessarily expensive, likewise T45 material is unnecessarily expensive. If customers have an overwhelming desire to have bars made out of these alternative materials, this can be arranged at additional cost.

#### **FAQS**

#### Q1. Will I still be able to erect the hood sticks on my soft top car with the ROB fitted?

A1. Yes! All our ROBs, where specifically intended for soft top cars will allow for the erection of the hood sticks without any modification

#### Q2. Will I be able to fit the TR2-3B Roll Over Bars with a hard top?

A2. Yes. We have tested the installation with a steel works hard top. The hard top on Neil Revington's TR2 provided about 5mm clearance between the bar and the under-face of the steel hard top.

#### Q3. Do I need an FIA certificate if I intend to use the ROB or Cage in competition?

A3. No. All our ROBs and cages comply with FIA rules on construction and material at the time of writing. See the issue date of this document, lower right. As the design and materials used conform to FIA drawings (and Motorsport UK in the UK) no certification is required. However, it is still incumbent on the customer to ensure the ROP you choose is appropriate and acceptable in your chosen sport.

#### Q4. Will the bar or cage fit straight into my car?

A4. Yes to a point. It would however be highly unlikely that the bar would simply drop onto all surfaces, particularly on older cars such as the TR2, ready for the bolts to be fitted and tightened. These early cars were virtually hand built and of course any car which has been rebuilt is likely to be a different shape to original. ROPs are supplied with fitting instructions (where appropriate) detailing methods that can be employed to encourage your car and your new ROB or cage to fit together.

#### Q5. Are fitting instructions included?

A5. Yes fitting instructions are included where necessary. This in particular refers to full cages, however simple rear hoop ROBs do not require fitting instructions. If help is required RevingtonTR are always here to help.

#### Q6. Is the ROB supplied with a fitting template?

A6. No fitting template is required, the bar will only fit to best advantage in one place

#### Q7. How far back and at what height does the TR2-3B ROB sit? I am fixing my seat to the floor for historic racing and need to be sure the ROB is high enough.

A7. Please have look at product RTR9047-2HBR on our website. The photograph labelled 'Fitted 2' shows the bar in line with the joint of the tonneau rails. This is the ideal fitting position and allows for the hood frame to be raised and for a hard top to be fitted whilst affording plenty of room for the driver's seat to be positioned sufficiently far back to accommodate tall drivers. In this position the top of the ROB is 350mm above the top of the tonneau capping when measured with a spirit level resting on the top of the ROB. If the hood frame is not to be fitted, then the bar can be moved further back.



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TR2-3B ROI	Bs RTR904	7 Series					
Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes
RTR9047-1	Road					N/A	Separate Harness bar RTR9047HB or -1 can be used
RTR9047-1HB	Road	✓				N/A	Harness bar has no ferrules
RTR9047-2R	Competition		✓			RHD	Separate Harness bar RTR9047HB or -1 can be used
RTR9047-2L	Competition		✓			LHD	Separate Harness bar RTR9047HB or -1 can be used
RTR9047-2HBR	Competition	✓	✓			RHD	Harness bar has no ferrules. Special order only
RTR9047-2HBL	Competition	✓	✓			LHD	Harness bar has no ferrules. Special order only
RTR9047-3R	Competition			✓		RHD	Separate Harness bar RTR9047HB or -1 can be used
RTR9047-3L	Competition			✓		LHD	Separate Harness bar RTR9047HB or -1 can be used
RTR9047-3HBR	Competition	✓		✓		RHD	Harness bar has no ferrules Special order only
RTR9047-3HBL	Competition	✓		✓		LHD	Harness bar has no ferrules Special order only
RTR9047HB	Harness Bar	✓				Both	TR2-3B Universal Harness bar with ferrules
RTR9047HB-1	Harness Bar	✓				Both	TR2-3B Universal Harness bar no ferrules
TR2-3B Cag	es RTR909	1 and RTR	9128 Series.	These cages are	supplied to special	order.	We may require the car to ensure correct fit
Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes
RTR9091R	Full Cage	✓	✓		✓	RHD	Front Hoop below the dash
RTR9091L	Full Cage	✓	✓		✓	LHD	Front Hoop below the dash
RTR9128R	Full Cage	✓	<b>✓</b>		✓	RHD	Maximum Protection with a full windscreen height front hoop (not below the dash)
RTR9128L	Full Cage	✓	✓		✓	LHD	Maximum Protection with a full windscreen height front hoop (not below the dash)

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TR4-6 Soft Tops ROBs RTR9053 Series									
Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes		
RTR9053-1	Road					N/A	Separate Harness bar RTR9148HB or -1 can be used		
RTR9053-1HB	Road	✓				N/A	Harness bar has ferrules Special order only		
RTR9053-2R	Competition		✓			RHD	Separate Harness bar RTR9148HB or -1 can be used		
RTR9053-2L	Competition		✓			LHD	Separate Harness bar RTR9148HB or -1 can be used		
RTR9053-2HBR	Competition	✓	✓			RHD	Harness bar has ferrules Special order only		
RTR9053-2HBL	Competition	✓	✓			LHD	Harness bar has ferrules Special order only		
RTR9053-3R	Competition			✓		RHD	Separate Harness bar RTR9148HB or -1 can be used		
RTR9053-3L	Competition			✓		LHD	Separate Harness bar RTR9148HB or -1 can be used		
RTR9053-3HBR	Competition	✓		✓		RHD	Harness bar has ferrules Special order only		
RTR9053-3HBL	Competition	✓		✓		LHD	Harness bar has ferrules Special order only		

#### TR4-5 Hard Tops ROBs RTR9148 Series

RevingtonTR has produced an ingenious <u>backlight and Surrey or hardtop arrangement with an integral roll over</u> bar suitable for TR4, 4A, 5 and 250. This arrangement has been successfully fitted to many TR6's as well. See BODY section on our website for details of the full kit

These ROB's have been cleverly designed with sliding feet to accommodate different shapes and sizes of car; this will allow the main hoop of the ROB to fit neatly up inside the 'top hat' section of the backlight frame. Once the correct height has been established the feet are bolted firmly in place. This is a very tidy solution, which results in the rearward vision not being impaired.

Detailed below are the bars that form part of this arrangement. The bars incorporating a removable diagonal are supplied with a rear hoop fitted with bosses in the main hoop to allow for both left and drive and right hand drive removable diagonal fitment.

Whilst intended for use with our fibreglass backlight frame, the basic ROBs in the RTR9148 series can be bought separately so they can be fitted under the original aluminium backlight frame. Unlike our fibreglass backlight frame for which these ROB's were designed, the original aluminium version has two bosses cast into the under face through which the hard top centre panel or surrey top would be attached. As the ROB will sit directly below these access holes the main hoop incorporates two hollow ferrules to enable the hard top panel or surrey top to be fastened through both the ROB and the backlight frame. Longer bolts are required to fit the hard top centre panel or surrey top. The bosses in aluminium backlight frames previously mentioned, can be ground away to allow the bar to better sit up inside the backlight frame more in the manner of our fibreglass unit which is designed specially to allow for this.

**HARNESS BAR.** As the back stay feet are bolted onto the main assembly, a welded on harness bar is impractical. To overcome this we have developed a separate bolt on harness bar part number **RTR9148HB** which should be ordered separately. **RTR9148HB-1** is a similar bar for harness shoulder straps which wrap around the bar.



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TR4-5 Hard Tops ROBs RTR9148 Series										
Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes			
RTR9148-1AK	Road					N/A	TR4 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-1BK	Road					N/A	TR4A, 250, 5, 6 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-2ARK	Competition		✓			RHD	TR4 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-2BRK	Competition		✓			RHD	TR4A, 250, 5, 6 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-2ALK	Competition		✓			LHD	TR4 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-2BLK	Competition		✓			LHD	TR4A, 250, 5, 6 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-3ARK	Competition			✓		Both	TR4 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-3BRK	Competition			✓		Both	TR4A, 250, 5, 6 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-3ALK	Competition			✓		Both	TR4 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148-3BLK	Competition			✓		Both	TR4A, 250, 5, 6 only. Separate Harness bar RTR9148HB or -1 can be used			
RTR9148HB	Harness Bar	✓				Both	TR4-6 Universal Harness bar with ferrules			
RTR9148HB-1	Harness Bar	✓				Both	TR4-6 Universal Harness bar no ferrules			
TR4-6 Hard T	ops Full Cag	es RTR9177	Series							
Please note for T	R6: This arrang	gement will only	fit open top							
Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes			
RTR9177-1R	Full Cage	✓	✓		✓	RHD	Dash needs to be cut to fit or short dash used			
RTR9177-1L	Full Cage	✓	✓		✓	LHD	Dash needs to be cut to fit or short dash used			

Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes
RTR9061-1	Road					N/A	
RTR9061-1HB	Road	✓				N/A	
RTR9061-2R	Competition		✓			RHD	
RTR9061-2L	Competition		✓			LHD	
RTR9061-2HBR	Competition	✓	✓			RHD	

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RTR9061-2HBL	Competition	✓	✓		LHD	
RTR9061-3R	Competition			✓	RHD	
RTR9061-3L	Competition			✓	LHD	
RTR9061-3HBR	Competition	✓		✓	RHD	
RTR9061-3HBL	Competition	✓		✓	LHD	

### TR7-8 Coupe ROB's RTR9138 Series. These ROB's are supplied to special order. We will require the car to ensure correct fit

Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes
RTR9138-1	Road					N/A	
RTR9138-1HB	Road	✓				N/A	
RTR9138-2R	Competition		✓			RHD	
RTR9138-2L	Competition		✓			LHD	
RTR9138-2HBR	Competition	✓	✓			RHD	
RTR9138-2HBL	Competition	✓	✓			LHD	
RTR9138-3R	Competition			✓		RHD	
RTR9138-3LK	Competition			✓		LHD	
RTR9138-3HBR	Competition	✓		✓		RHD	
RTR9138-3HBL	Competition	✓		✓		LHD	

### TR7-8 Coupe Full Cages RTR9139 Series. These cages are supplied to special order. We will require the car to ensure correct fit

Part No	Bar Type	Harness Bar	Fixed Diagonal	Removable Diagonal	Front Hoop & Removable Side Bars	LHD or RHD	Notes
RTR9139R	Full Cage	✓	✓		✓	RHD	Dash needs to be cut to fit
RTR9139L	Full Cage	✓	✓		✓	LHD	Dash needs to be cut to fit